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SEE OUR AD ON PAGE 31 FOR MORE NETWORK INFORMATION

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From the Editor



download and areas for dialogue on every topic under the sun. If you log on to the Internet, you can monitor the "talk" between pockets of software companies, program developers, network designers, writers, business personalities and lots of other just plain knowledgeable folk. If you want the action, you can always read the transcript of what other people said when the fun, airy questions you have can usually be answered by some helpful chat sessions.

There are three new databases of information to tap into. *Binary Images* and *Graphics* now keep back some text available to *On-Line* software. (The *Computer Paper* is available on *Sega*.) Many services allow you to download articles of topics. We have recently went back to working out of the local pool. We need to move completely and we need to know that good was considered good for master level swimming. I want online with *GraphicServe* and searched a magazine database and came up with a number of articles of interest on swimming, close but no cigar. I then went into another area that contained back issues of *American Newspapers*. Bingo, I started to get stories and speeds that she wanted. While it may seem trivial, if you subscribe something that you are really interested in, you want to know about it 10 o'clock at night, you start to see the power of the online world.

Thanks to all the contributors throughout. If you are new to telecommunications, you may want to look out the course put on by David Harris (see the article *Whose? The Good Stuff?*). It's a matter of pride, he came up with the idea that rather than just selling these telecommunications, he would do a show-and-tell session for some years. In his course, he does live demos of *Office*, *Word*, and *GraphicServe*. A good place to start.

Last but not least are all the free Bulletin Board Systems (BBS's) maintained by those who code—*Electronic People* (Review Operators). We have a list of some of the BBS's on the Lower Mainland. We encourage you to sample some of them. They cover almost every corner under the sun and all of it most, see free. One caveat, however, though that the number first yourself would your modem, probably at a noticeable loss—there is nothing worse than getting the helpdesk lost where a of a modem in your ear 24/7. We make every effort to ensure the accuracy of the list at press time. The reality of any office board is that there is a high turnover. The telephone number listed is assigned to a core telephone number who usually subscribe a different BBS telephone number. Be kind to your neighbors. As you can probably tell, I am enthusiastic about the possibilities of telecommunications. There is a wealth of information, people to communicate with, progress and games and there for the taking. The time, if you use a little discretion, can be relatively minor. (Just your initial investment in a computer) and it is a good time. My where you get used.

Enjoy the issue.

Kevin Singh

Kevin Singh, Editor/Publisher

Editorial Schedule

Issue	Topic	Days	Genre/Style	Deadline
MAY 1991	Network Computers, Personal Information Managers	April 18	April 12	May 3
JUNE 1991	486 Computers, CD-ROMs, Upgrading Your Computer	May 13	May 18	May 31
JULY 1991	Custom Software Development, Databases & Mainframes, More	June 10	June 12	June 28
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LETTERS
TO THE
EDITOR

Who Was That Masked Man?

I'm sorry, but the "masked man" on the cover of the March issue doesn't portray a man trying to fool, make someone, including myself, feel that the head features of the person suggest that it's a "heroine" job, a woman. So much for not trying to convey an image of stereotyping women, because at this one you failed to convince me, too. Good start though. The votes looked good.

Andrew Peng Gooey
via Mimi Lind

I am not, as you look like a gay in me.—SE

I would like to see in the future of The Computer Paper several things. First of all, comparisons of the local classes made would be very helpful. I would also like to see a variety of different types of reviews. And lastly, I would like to see The Computer Paper made longer!

Thanks for your time,
M. Fader
via Mimi Lind

Check out the month's PCMagazine, it has review of VGA monitors. We are looking for making it longer. This is the biggest single issue yet.

Canada's Future: On-the-fair

Your readers may be surprised to hear this. The Catalyst Forum on Canada's Future (aka The Special Commission), is now available for public review online via the MIND LINK 800. To the best of my knowledge, that's the first time a Royal Commission has held "hearings" on this country (although I'd be pleased to hear about other examples).

I'd like to thank Rick Breyer at MIND LINK for his comment and The Computer/Publisher software. Also I'd like other 800-800s to include the Catalyst Forum on their boards. For info call 905-7361.

Sincerely Mark O'Neill General Forum on Canada's Future (March 5-9)

Revised Response

With respect to your March 31 edition article on how to buy a Laser Printer: Dark Based Colors, are products "known" are sold extremely well into the entry level desktop publishing arena where people cannot afford or do not wish to use the most recent expensive "true" postscript print-

ing devices. We have received many complaints on how easy/fair/acceptable to install and use, and as our version of UltraScript is a very recent one, we have also received many complaints on the output speed. We would much prefer that instead of implying that the product is a "bottle," so so strongly stated by your reader, you properly endorse our product. We would be very pleased to provide feedback for a true evaluation.

The Raven LP1110 features the HP LaserJet II, 1000 PostPrinter II, Epson F5000, 7600, Dinko 550, and Raven 9121/9104 models are shown our letter. Apple Postscript printer offers Apple PostScript, HP LaserJet II and Dinko 550 only, not those outlined in your article.

I also noticed that you will be releasing Notebook and 904 computers as your upcoming series. I would like to know our products featured in those covered possible. Can you please provide me with a contact that will be providing the evaluation.

Sincerely, Alan Gilman
National Training Coordinator,
Revised EG Canada Inc.

Granny Brown's Response: In the March '91 issue, I incorrectly attributed some features of the Raven LP1110 and Postscript II-4000 laser printers to the LP1170-PS and IC-4015 models instead. The LP1110 and IC-4015 feature HP LaserJet II, HP PostPrinter II, Epson F5000, Dinko 550 and Raven 9104/9105 models. The higher-end LP1170-PS and IC-4017 Postscript models offer Apple PostScript, HP LaserJet II and Dinko 550 only, not those mentioned in the article.

Regarding Postscript/UltraScript, I am very familiar with UltraScript in fact, I have written a number of manuals and the called "Using UltraScript" and "Advanced UltraScript," available in the file cabinet of the Golden Removable on Office. Like you, I am impressed by it. However, the fact that it does not directly support Apple Type 1 fonts severely limits the usability for many users, especially those Type 1 fonts contain "bottle" that enable letter-rendering at 300 dpi. And while Type 1 fonts can be converted to Type 3 fonts (which is also handled, like the other fonts, and off a bottle. One! UltraScript supports Type 1 fonts. I'll recommend Publisher of the Press for high-resolution PC or Mac users who want a software Postscript printer that includes Type 1 font support.

SuperCalc 5 Clone?

In your review of SuperCalc 5, George Shele and Steve Hinkins ask this question: "Why would anyone want to copy

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the Lotus case introduced? This is a classic example of being blinded by the so-called "market leader" and therefore ignoring what older and/or better products that are not as well-known.

The fact is, SuperCalc has been on the market FOUR YEARS when Lotus 1-2-3 appeared. SuperCalc 1 was discontinued for \$15,000 to be replaced with the Calcuware 1, the design problem to be fixed, but better than VisiCalc. Later, Lotus also copied VisiCalc's slash-key interface, adding some features SuperCalc already had. So who copied who?

Having bought and fallen in love with Calcuware 1, I am sure I'd switch to a GUT spreadsheet someday. Until then I'll keep using SuperCalc 4 (not even 5!) because it all fits on a 720K floppy and runs fine on my old 8686 laptop. Sometimes, you don't need everything - just enough.

Alan T. Chantigny
Vancouver

DTP's Happy

On behalf of the Desk Top Publishers User Group, I would like to take this opportunity to thank you for the listing in the User Group Column of your paper. We get a lot of calls from desperate DTPers who have seen the ad. The March issue featuring Desk Top Publishing was of particular interest to

our members. The software options on Hardware and Software always make your magazine a reliable source of information.

Many thanks again!
Karole Dwyer
Director, The D.T.P. Group, North Vancouver

Educational Facility

I have been a casual reader of your publication for about two years now and have enjoyed many of the articles in *The Computer Paper*. Thank you for the well-written, easy-to-read and informative articles and columns which I find whenever I pick up *The Computer Paper*.

I would like to request *The Computer Paper* be sent to my home. I am interested in acquiring an extensive "library" of computer journals for my children and as a resource for the community. Please add me to your subscription list and inform me of the amount I owe you for an "Educational Facility" subscription. Again, thank you for publishing so informative, readable computer magazine. Keep up the good work.

Norman J. Egwood
Fort St. John

The Computer Paper welcomes reader comments. Letters may be edited for clarity and brevity.

Continued on 2



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What's New

A first look

CalComp introduces New Color Printers

RICHMOND, B.C., MARCH 14 (TCP)—CalComp has introduced the ColorMaster Plus thermal transfer printer. With a resolution of 300 dots per inch (dpi), ColorMaster Plus produces laser-quality graphics in full color on letter (A4) or tabloid (11x17) paper or transparency film.



The printer combines a compact design with a thermally machine ink ribbon, which is housed in a cartridge for clean and quick installation and removal. Three colors—cyan, magenta, yellow—and black are transferred to the paper or film in separate passes. (A black ribbon is also included for single-pass monochrome printing.)

By using combinations of panel colors and patterns, thousands of colors can be created. ColorMaster Plus provides a variety of optional software, including solid colors, dot patterns and crosshatching. PANTONE certified



Inexpensive Slim-line PCs introduced by Compaq

MONTREAL, QNT., MARCH 14 (TCP)—Compaq introduces Machines Inc. announced the introduction of a new series of Slim-line style personal computers.

The three new models share a modular and attractive design and measure less than one cubic foot (10 litres) in height.

The SL200-11 is an entry-level model based on the 80286 10MHz processor and the SL300-11 and SL386-11 are higher-performance models using the 10MHz 386 processor, one with a 10MHz clock speed and the other running at 33MHz.

Compaq features on the three systems include 1MB of on-board RAM (expandable to 5MB), five expansion slots (three 16 bit and two 8bit), one parallel and two serial ports, Super VGA video output, a 150-watt power supply, MS-DOS 4.01 and QW-BASIC. Microsoft Windows 3.0 is standard with both of the 386 machines (they can also operate with Unix or OS/2). A variety of hard and floppy disk options are available in an enhanced multi-compression.

"The Slim-line series is a response to the market demand for smaller, more elegant-looking machines," comments Tim Shepherd, Compaq's Director of Marketing. "We've priced the new models quite aggressively and are competing strongly with the well-established and small business servers. We also expect to do well in the educational market where we've traditionally been quite strong."

In a separate press release, Compaq Business Machines has signed a \$5.4 million agreement with Revenue Canada/Trucon to provide complete 386/387-based systems for use in small business across Canada. The systems will be custom configured and include tape backups, disk drives, networking cards and software.

Contact Tim Shepherd, Compaq, 416-499-4212.

Q: Who shrunk their 386³³? Answer: Q.

The new Q386³³ Slim is now in Canada!

Experience the full power of a 386³³ Cache machine in a space-saving Slim case! Q by Javeli now adds the 386³³ to its Slim series. With up to 5 MB of cached RAM and super fast ATI extended VGA integrated on the motherboard, the Q386³³ Slim offers unparalleled value—a superbly designed machine. All of Q's Slims come with incredibly fast internal super VGA and five open expansion slots, ensuring ample room for future expansion—a feature made possible by the design of its manufacturers, the Motherboard Factory. And as with all of Q's computers, you get a two-year limited warranty and a service centre right here in Vancouver!

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For creating embedded images and similar tasks, ColorMaster VBC is compatible with Harvard Graphics and other popular word processing through a LaTeX-style output device.

The ColorMaster Plus PS version offers the capability to capture images from the host video screen, and ColorMaster Plus PS raster-converter models into PC users from Windows applications such as Corel DRAW.

Contact Brian McKeen, CalComp, 804-279-0275



When do you get out of those great
vacation photos?

New Drive Cleaning Tool

VANCOUVER, B.C., MARCH 14 (TCP)—WDW Hacking has introduced HEADMAX, a disk cleaning and diagnostic system for IBM and compatible computers. It says it really saved money and intelligent.

The inside of the disk contains the diagnostic program, the outside of the disk is an accurate calibration pattern and the outer surface has been treated with a specially formulated cleaning media that the company claims cannot damage the delicate heads on your drive and doesn't require the use of solvents.

During a cleaning request, the head signal is measured using the special calibration track. The heads are then automatically placed over the specially formulated cleaning area on the actual HEADMAX disk and a cleaning cycle is initiated. The heads are gently rubbed in and out on the cleaning area using a clean part for every session. This method further speeds up contamination.

After the cleaning cycle, the head signal is again automatically measured. HEADMAX will perform repeated cleaning cycles until there is no further improvement in the results. The cleaning cycle then stops automatically.

For the advanced user, HEADMAX incorporates full diagnostics and error logging. The user can be informed of intermittent errors. The diagnostic ac-

tion begins for the screen user and has been designed to meet the service engineer request for the simple state-of-the-art software. Contact: MEDA Marketing, 604-254-0211

Bernaby Company Named NeXT Computer Dealer

VANCOUVER, B.C., MARCH 14 (TCP)—Advantage Computer of Bernaby has signed an agreement with NeXT Computer, Inc., of Redwood City, Calif. to be the exclusive NeXT Computer dealer in British Columbia. NeXT Computer is a high-end computer manufacturer and software developer. The company had previously been an Apple-only dealer.

Berry Connor, president of Advantage Computers, says the addition of the NeXT product line is a reflection of his company's long-term commitment to providing accurate and cost-effective computer products and technical support in British Columbia.

"The NeXT computer will get past the stage of being a novelty," Connor said. "We're hardware and software manufacturers in developing products for the platform. To ensure that NeXT is a computer and not just a marketing exercise which has entered quickly into the marketplace in 1990," Connor, Advantage Computers, 604-693-0277



West Coast Programmers Stack up the Awards

VANCOUVER, B.C., MARCH 14 (TCP)—Looks like the guys at MicroWorld have done it again. They were once awarded both Best International Entry and Best Interface Design in the MacWorld Super Stacks competition. The awards are for their Quattro and VisiCalc Advanced Guide books for the Macintosh of Toronto. According to MicroWorld, Toronto B.C. is very happy with their 19% discount on the award. Some B.C. is the award. These discounts for American awards and the 10,000 Mac owners in the U.S. who don't mind that stack piled on. They're not, and we're not, why there is no mention of stack in the stack. According to MicroWorld, it will be as the next version.

According to MicroWorld, the award is the Best Macintosh Entry was Vancouver's own VisiCalc Advanced Guide. VisiCalc Advanced Guide is a book for the Macintosh and the children at VisiCalc.

Finally, Occure Productions got an honorable mention for Best Commercial Entry for its TypeChalk 1.0b. This and little while is a stand-alone program used with SuperCard that allows you to quickly and easily change text and print a complete type book from within a standard text editor for desktop publishing.

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TypeChart graphics are extremely intuitive, help friendly and a comprehensive manual. Contact: Lloyd Berwick, Motion Works, 604-750-0195, First Cameron, Woodbridge, 604-481-1708, Gary Kinkley, Ontario Productions, 604-297-5270.

MultiTrack Named as 4-Dimension LAN Distributor
EDMONTON, ALBERTA, FEB. 27 (TCP)—MultiTrack Electronics has been selected as the official Canadian distributor for 4-Dimension LAN and connectivity products, the company announced today.

As distributors for the line, MultiTrack will stock all items on its Western Canadian warehouse in Edmonton. The 4-Dimension product line includes Personal and Ethernet cards, LAN workstations and a complete range of LAN accessories.

Contact: Ronald Ishida, MultiTrack Electronics Ltd., 605-450-0390.



An Apple for the Teacher

EDMONTON, B.C.—Apple just made the Macintosh Program for classroom use. Apple Macintosh Class computers to schools that operate in serving the needs of the disabled and those with special educational requirements.

Each of the six systems includes an Apple Macintosh Class Computer, two educational software programs designed to improve reading and auditory skills and a MacRecorder Sound System.

The school system is Vancouver, the Good Children's Society of B.C., helps disabled children and their families by enhancing communication between family members. The interaction allows for ap-



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APPLE

Apple Introduces New Printers

CUPERTINO, CALIFORNIA, MAR 11 (ENR)—Apple Computer has introduced two printers, the Apple StyleWriter and the Apple Personal LaserWriter LE, to compete with the LaserJet and the HP LaserJet. The StyleWriter is a desktop printer with a suggested retail price of \$299. The Personal LaserWriter LE is a desktop printer with a suggested retail price of \$1,199. Both printers are designed to be used with the Apple II, IIx, IIc, and IIcx computers.

The StyleWriter, with a suggested retail price of \$299, represents Apple's entry into the desktop desktop printer market. It features a maximum of 360 dots per inch (dpi) in the horizontal mode and 180 dpi in the vertical mode. The StyleWriter is a speed rated at 1.5 pages per minute (ppm) in the horizontal mode and 1 ppm in the vertical mode. It weighs 5 lbs. and has a 4.5x6.5 inch paper size. According to Apple, the StyleWriter is a 1/2 inch wide of approximately 500 pages of text or 200 pages of drawings in a high resolution of graphics. Replicated in color, the StyleWriter is a suggested retail price of \$299.99. A 10-page brochure is included with the printer.

The Apple Personal LaserWriter LE has a suggested retail price of \$1,199 and takes the place of the LaserWriter II as the middle of Apple's printer models. It is a 100 dpi printer with a speed of 4 ppm and comes standard with a 10-sheet paper tray. It also has a suggested retail price of \$199.99 and requires a laser printer. The LaserWriter LE is a desktop printer system with a 10-sheet paper tray. It is a 100 dpi printer with a speed of 4 ppm and comes standard with a 10-sheet paper tray. It also has a suggested retail price of \$199.99 and requires a laser printer.

Apple's new printers are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers.

In conjunction with the introduction of the new printers, Apple announced the exclusive right to sell its new printers. The new line of LaserWriter IIc printers is available from \$1,199 to \$1,999, a 10% discount. The new line of LaserWriter IIc printers is available from \$1,199 to \$1,999, a 10% discount. The new line of LaserWriter IIc printers is available from \$1,199 to \$1,999, a 10% discount.

Apple's new printers are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers. They are designed to be used with the Apple II, IIx, IIc, and IIcx computers.

Contact: Ken Pinsky, Apple Computer, 408/744-4000.

Apple Cuts Prices On Glider Mats

CUPERTINO, CALIFORNIA, MAR 11 (ENR)—As its latest bid for market share, Apple Computer has reduced prices on all its other Macintosh models. Prices on the IIc, IIx, and IIcx were cut as much as 21 percent.

Unaffected were prices for the second-generation Macintosh Classic, the IIc, and the IIx. However, the new com-

puters for the IIc was located to make it compatible with second-generation memory (RAM) instead of the first-generation. Also unaffected was the second-generation of the Macintosh IIc. The new Macintosh IIc, located for the IIc, includes 512 kilobytes of high-speed static RAM and can significantly speed performance of the IIc. The IIc had been delayed

previously by technical and compatibility issues.

Based on the new product marketing, and the cost were part of the company's new strategy of cutting prices to capture market share. Until now that year's introduction of the second-generation Classic, Apple had been pricing high-powered and high-priced units.

The Mac IIc, the largest and most powerful member of the Macintosh family, had no price cut by about 20 percent depending on configuration. The top

price, formerly \$10,500, is now \$1,699. The Macintosh IIc received a cut of about 10 percent but had its base configuration limited from 1 megabyte of RAM to 512 kilobytes. The price of the Macintosh IIc, 30 inch 4 megabytes of memory and 10 megabytes of disk, was reduced 30 percent to \$1,699. Only \$100 more than the same model with 1 megabyte of memory and a 40 megabyte disk.

Contact: John Cook, Apple, 408/744-3043.



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any operating systems.

On Monday, March 4, the Journal covered the RISC chip production problems of Motorola, headquartered in Schaumburg, Illinois.

Also reported was Westborough, Mass.-based Data General's expected March 15 shipping of a 32-bit computer to serve a 500-node network.

The WSJ covered the following four items on Tuesday, March 5:

Toshiba may be the first computer manufacturer to bring out portable computers with built-in cellular modems.

Two others are expected to follow suit by fall.

Palo Alto, Calif.-based Hewlett-Packard expects to accelerate its workstation business later this month when it introduces three computers, priced between \$11,999 and \$49,999, which reportedly are almost twice as fast as currently priced workstations from Sun Microsystems and International Business Machines.

Artistic Systems, Mountain View, Calif., planned a one-day unveiling of its software technology, "Multiple Windows,"

which may boost the appeal of effective publishing when it becomes commercially available this summer.

March 6's WSJ takes a look at Windows versus OS/2.

Apple's Report on Publishing Systems for March 18 carries an extensive evaluation on the P-link newspaper publishing system from Times Inc. and takes a look at Hewlett's Callcenter graphics system.

The March 1990 Communications of the ACM contains several discussions relating to the ownership of information

and legal claims against hackers, especially The United Nations' Greg Woodard. Computerworld dated March 11 says that the new San Jose, California Windows and OS/2 show are very much a retail decision for OS/2 applications and OS/2 developers.

March 11's Computer Graphics Week carries a story about the Environmental Protection Agency predicting more than \$1 billion in computer printer market growth for the next 18-month period, and even covering \$80 million for the agency's first two supercomputers.

The Wall Street Journal reported on Tuesday that Victorinox Group, among other directors of Swiss, Italy-based Ing. C. Clivetti, will assume the company's share as recovery, citing the world's introduction of a microcomputer line last year's strong growth, overall cost control and the start of job cuts which eliminated 28 percent of the workforce since 1989.

The Journal also ran these articles on March 12:

International Business Machines (IBM), Armonk, New York, conceptualized an innovative finite state machine models and cost prices.

Wal-Mart Stores has reported MCR a large contract, per laptop worth more than \$10 million, to install MCR 1100 Model 3445 computer in some 100 Wal-Mart stores.

IBM Japan, hoping to make its personal computer operating system a success worldwide in Japan, reportedly will share key system details with Japanese firms, the move could raise its share of Japan's PC market, as far dominated by NEC, to 50 percent by 1993, and some 100 U.S. software firms are now writing IBM-compatible programs for the expected market.

According to the Wall Street Journal for Wednesday, February 27, Bill Gates, Microsoft's CEO and chairman, stated on Tuesday that a Federal Trade Commission's investigation about 1 anticompetitive applications, Microsoft states the FTC is focusing its attention only on Windows.

March 15's WSJ also reported that, as a result of American Telephone & Telegraph and the MCR, AT&T has told several hundred of its Longview Systems personnel that they must either quit voluntarily within two months or be terminated, some will get two months severance pay on departure, and AT&T offers other code licenses rather for staying until the merger with MCR is complete or for agreeing to selling part to use after being terminated.

ITW WORLD

Microsoft Under Investigation By The FTC

REDMOND, WASHINGTON, MAR. 12 (WSJ)—Microsoft has announced that it is complying with requests for information made by the Federal Trade Commission (FTC) as part of a computer investigation, apparently concerning Microsoft's claims by MS-Magazine.

Microsoft has released a statement saying it had received notification of the investigation in June of 1989. The investigation appeared to have been launched after statements made by Microsoft during the 1989 Fall Computer Conference in Denver planned for Windows.

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performance, it comes, time again. It has made the design also best in its class in terms of use as the perfect motherboard machine — as they both are right-handed.

The 486 also takes per-walk position as it equips as the fully compatible with the current disk machine. It comes in a small case that is a lightweight cool and even can be operated in the front. The BallPoint comes of a center which changes in the keyboard, and a standard trackball system. It is convenient as that controls work without with the rest as in providing a PC disk drive. Despite

this, the small system will not only be the way to use, choose which one of the four buttons they will use, and use the PC, and like a disk drive. When used as the front, the rest of the palm and the device position the ball.

A new driver, version 4, has been written for the new trackball. Microsoft won't be selling the BallPoint separately and later this year, and as most ball mice have been used will have a mouse ball. The BallPoint Mouse will be for USBITS.

Workland Intros Windows Products

SAN JOSE, CALIFORNIA, MAR 11 (NS) — Workland International has introduced three Windows-based software products at the Windows & City/7 Conference in San Jose last week.

ObjectVisual is a program development tool for the development of Windows applications. Workland Co. for Windows allows developers to create Windows applications in C++ or C. The Parallel Database Engine 2.0 allows programmers to build database systems in Par-

allel tables at Windows products.

ObjectVision enables non-interactive applications to create customer Windows 3.0 applications without programming by allowing users to visually manipulate forms and graphics of database tables, and applications to corporate data with a "drag and drop" process.

Workland Co. for Windows is a complete C++ and C++ programming environment for developing DOS-based Windows applications.

The Parallel Database Engine 2.0 enables system developers to integrate relational and distributed database systems into C++ or C++ based Windows 3.0 applications. The package allows system developers to develop applications that process, read, and write Parallel database tables as both single- and multi-user environments. Version 2.0 is scheduled to ship later this month.

Additionally, Workland will have special showings of Turbo Pascal for Windows. The package includes all the tools necessary to build Windows programs, without the need for the Microsoft Windows Software Development Kit.

Contact Sandra Huxley, Workland International, 408-479-1100.

New Multiuser Operating System from DBI

MONTEREY, CALIFORNIA, FEB 28 (NS) — Digital Research, the company that created CP/M and created the IBM DOS compatible OS/2 operating system, has introduced its latest multiuser operating system.

DBI Multiuser DOS is a replacement for the company's Concurrent DOS/386, and adds to technology introduced in DBI DOS 3.0. This multi-tasking operating system runs on 80386 and 80486-based computers and can support up to 64 users. The company is continuing to develop systems that are alternatives to Unix which allow users to retain their DOS applications.

The new operating system will be available in March at a retail price of \$495.

Contact Robert Johnson, DBI, 408-944-0000, James O'Donnell, DBI, Pacific Sciences, 415-944-5800.

NETWORKS

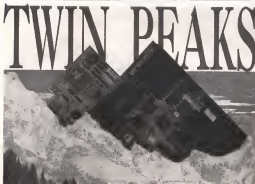
Microsoft Steps Into LAN E-Mail Market

REDMOND, WASHINGTON, MAR 7 (NS) — Microsoft is planning to enter into with an electronic mail package, apparently Windows-based, called EMail local area networks based on The Network Course, following Microsoft's recent acquisition of that package's producers, Communion Software Inc. of Vancouver, B.C.

Details of the acquisition, however, were not 100% sure and disclosed, but it is a clear expectation for the company to be the end of March.

Microsoft is expected to enter into a new Microsoft Mail for PC Networks based on Network Course. Microsoft and CBI had been working for nearly a year on integrating electronic mail software.

Microsoft plans to begin a new product line under the Windows-based mail software all 70 CBI employees previously in the. Contact: Mickey Tischer, Microsoft, 206/552-4000.



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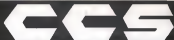
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The Japanese Data Discman costs \$3,000 (yep, \$3,000) and the software costs between \$25 and \$150. Over 100,000 units of Data Discman have already been sold in Japan.

Contact: Sony, 1-81-3-6648-2200.

AND Wins Right to Use 386 of Chips

SUNNYVALE, CALIFORNIA, MAY 1 (AP)—Advanced Micro Devices has won the right to use the number 386 on its microprocessors, and to use another trademark the standard. AMD has had a lawsuit for the trademark, which was made by U.S. District Court Judge William Ingram on March 1. Judge Ingram also stated that the number two is an trademark on chips, expressed disagreement but reportedly may differentiate its chips by calling them 386's, short for Intel 386.

"Intel's first best served," pronounced U.S. District Court Judge William Ingram.

He said in ruling that "the number two trademark is trademarked by Intel," but he said that the number two is a trademark on chips, expressed disagreement but reportedly may differentiate its chips by calling them 386's, short for Intel 386.

Intel's first best served, pronounced U.S. District Court Judge William Ingram. He said in ruling that "the number two trademark is trademarked by Intel," but he said that the number two is a trademark on chips, expressed disagreement but reportedly may differentiate its chips by calling them 386's, short for Intel 386.

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Some CD-ROMs Are Just Sell-Ins

PASSAIC, N.J., MAY 1 (AP)—The Editors of Electronic Publishing, a list of the top-selling CD-ROM databases of 1990 looks to be the list. Only two new titles made the list, publisher Barry Greenstein told Newsday. "Compass's Multimedia Encyclopedia" and "U.S. History on CD-ROM."

Other products on the list were all updates from the previous year's offerings, including the top-selling "Microsoft Bookshelf" and "Encarta Encyclopedia." The other top titles, in order, were the "Microsoft Programmer's Library," "PC 95 Library," a collection of database software programs, the "BellSouth Consumer Library," the "U.S. Census Bureau and Professional Reference," the "Compton Encyclopedia," from Compton Electronics, "U.S. History on CD-ROM" from Barnes & Noble, the "U.S. World Fact Book" from Quora Press, and the "World Atlas" from FolioWorld.

"The big question is whether it's a lot of good new titles," Greenstein said. "Only 4-5 good titles came out. It's like the software business. Top software ships and sell and are upgraded. I would guess that 3-5 new titles will come out in 1991."

Greenstein said he's not surprised by the lack of updates in titles. "I'm not surprised that the overall numbers aren't higher. The publishers have decided not to publish titles until the market settles. I would say to have CD-ROM drives, and they're not getting it to settle."

NEWSBYTES

The market would be helped if manufacturers made the 386/486 chips more regular base, he said.

Contact: Barry Greenstein, Bureau of Electronic Publishing, 201-462-7700.

HyperAccess

HyperAccess Version 2.0

MONROE, MICHIGAN, MAY 15 (AP)—HyperAccess has begun shipping version 2.0 of its HyperAccess/PC communications package for the IBM PC and compatibles.

The network, which originally shipped with both MS-DOS and OS/2 versions, now costs \$99.95 for MS-DOS, \$149.95 for both OS/2 and OS/2. Gary told Newsday that he was surprised to hear that OS/2 has been accepted. "One major exception has been communications, which is still a big question mark. It's been very important for us."

The major new feature of the update is remote control, where it will connect to a remote computer. The latest copy of PC Architect. Carlini told Newsday that he was surprised to hear that OS/2 has been accepted. "One major exception has been communications, which is still a big question mark. It's been very important for us."

Other new features include a built-in V.42 modem support, an interface to the Internet and script language features, new security management features, and added protocols against computer viruses. The program can now identify 150 virus signatures using capabilities from IBM's Virus Scanning program.

The new version of the package is aimed primarily at the market now held by Procomm Plus and similar communications utility products, such as those from CompuLink and other products. The new version also includes an optional set of 30 utility commands, the new commands used by Procomm and other programs, as well as the extension to help Procomm users apply their skills to the new program.

HyperAccess/2.0 also continues full support for the 16-bit serial communications chip sets from IBM PC/XT and some IBM PCs, as well as plug-in replacements for older PCs. The package also supports the Hayes 56K modem, which has 144,000 baud. The feature is especially useful when using a networking environment like Microsoft Windows or Procomm, or when using any other network.

Contact: Mark Gray, HyperAccess, 313-243-0075.

Don Jones Intro Flat-Fee Pricing

PRINCETON, N.J., MAY 14 (AP)—Foliosoft's new flat-fee pricing model for its software, Don Jones, News/Weekend has announced a flat-fee plan for personal computers during which users can get a flat fee of \$25 per month, subscribers may either subscribe and receive information from a com-

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Compaq Teams with Silicon Graphics?

ROSLINDEN, TEXAS, MAR 10/81—A Compaq spokesman has refused to comment on a recent press report that Compaq will join with Silicon Graphics and reproduce a new workstation.

"We don't comment on things of a speculative nature," said Mike Rossman at Compaq.

A recent New York Times report

stated that Compaq has agreed to buy something less than 20 percent of the shares of Silicon Graphics, a workstation manufacturer based in Mountain View, CA, for a combination of cash and Compaq stock. The transaction would then justify developing a new line of workstations that would be sold through the sales channels of both firms.

The deal supposedly follows an unsuccessful take-over attempt by Compaq against the smaller Silicon Graphics in January.

Comment: Mike Rossman, Compaq, 713-775-4816.

Sun Microsystems to Work on Next-Generation Workstation

TORONTO, JAPAN, MAR 10/81—Sun Microsystems, the California-based workstation manufacturer, has agreed with several major Japanese computer makers to jointly develop a new generation workstation called the workstation workstation.

According to the Tokyo Shogyo

Shimbun, the agreement, which is with Fujitsu, Toshiba and Matsushita, calls for the development of technology associated with the compression and decompression of digital motion pictures, a personal data processing IC, a window processor for motion pictures and a high-speed data transmission.

The workstation workstation is being developed with the Integrated Network Digital Network (INDN) as its basis, a technology which is expected to give wide acceptance within just next five years. Sun Microsystems plans to sell the workstation to the education, business and financial governments markets.

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Telecom: The Next Generation

By Graham Brown

Modems have progressed in capability and sophistication so rapidly it's remarkable that just two years ago, 800-based modems were the only modems that were all but forgotten. Then 1200 baud modems were considered by many to be obsolete, and can be picked up at a computer magazine for around \$20. (For the remainder of this article, we'll refer to the speed of modems in bits per second or bps, a unit which isn't all that accurate: a representation of modem speed is, in fact, a number of bits which is actually refers to the number of signal or state changes in a carrier per second. It is preferable to this bit/symbols per second, but as various protocols can represent multiple states with one symbol sent, for example, V.32, a popular standard for 9600 bps modems is actually transfer only 2,400 symbols per second, that's why modems represent their values, peaking at 9600 bps. Based on your requirements, we recommend to choose the 16th-century French inventor of telegraph code.) M. E. Fowler.)

Because the current generation of modems represents a progression in speed over the other models, we can therefore expect the next generation to overcome the two-fold slowest performance of modems to current data at speeds of 9600, 14,400, or even 36,000 bps, making the standard time for transmission through standard phone lines. At this speed, the main limitation becomes that the phone line itself. Never intended for high-speed data communications, standard analog phone lines are often prone to line noise that causes them barely able to keep up with the streams of data. (Line noise is more than just the annoying hiss, while noise-based (cross-country) lines are worse still.) Even special data-grade lines are hampered by the phone line's limited "bandwidth." Up to higher speeds phone lines has come widely available (see SDA, below), modems manufacturers will build other ways of increasing throughput.

Data Compression

To propagate faster, some modems compress the data as it's being stored, increasing the amount of information that can be sent per second. The two main data-compression schemes are:

- **MMF** Class 3.0 network protocol, established by Microsoft. MMF Class 1 through 3.0, (provide various degrees of compression).
- **V.42bis** - this standard defined by the CCITT. (The Class are based into national Communications Committee for the telephone mail (flagship). As, by the way, a Latin for data)



Standards/Glossary

The CCITT also established an interchangeable modulation standard to sit-

ter compatibility among 9,600-bps modems. Doubled V.32, it ensures that any manufacturer's V.32 modems can talk to any other make of model of V.32 modems (as theory anyway). But V.32 modems that support 9,600-bps modems drops V.32's rates. In light of Hayes' dominant position in the modems market (the company also has the AT command standard used as virtually every modem on the market), its marketing that a 16th-century French inventor of telegraph code: 9600 is one of the

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TELECOMMUNICATIONS

as any other 16MHz-based units that does not properly comply with the V.31 standard.

Buyers wanting full V.31 compatibility should look for the newer Hayes V-series ULTRA Supermodem 5600 installed on a V.31-compliant unit from another manufacturer.

Similarly, like the U.S. Robotics' 195T modem in our V.31 comparison, its high-speed technology is proprietary to Hayes, claiming it only conforms to industry specs when connected to other V.31

modems. Because of U.S. Robotics' patents (because of operation of full-duplex systems) a large number of designs using U.S.R.195T modems, you might find that compatibility with your brand of IBM's might be an unfortunate factor in your buying plans. U.S.R. also makes a dual-modem/modem offering V.31 and V.31B compatibility.

While part of the V.31 specification, the better V.31 units include an error-correction system called Touch-tone modulation (TDM) and either

MNP-4 for error detection and MNP-2 for data compression, or V.42bis, which incorporates MNP-4 and an improved data compression method.

Because Microsoft's software protocols were a de facto standard by the time the CCITT decided to establish its own V.42bis standards, it made V.42bis compatible with MNP-4 (error correction), substituting it by adding a data-compression routine that uses the Lempel-Ziv protocol.

V.42bis allows a pair of protocols to go

plaster modems to economically quadruple their throughput while retaining data integrity. The first modem squares the data and sends it. At the other end, the second modem converts the file and transmits it. By combining the error-correction and data-compression strategies, 9600bps and 4800bps V.42bis modems can provide throughput of up to 38.4 Kbps (38,400, or thousands of bits per second) by compressing data as fast as 4:1. The newer CCITT V.42 and V.42bis standards comply with the V.31 specification, so those 9600bps and 4800bps standard V.31bis, V.42 and V.42bis error-correction method similar to but not to be more efficient than, that officially MNP-4. V.42bis is a new protocol especially designed for high-speed full duplex (4:4 Kbps) communications. (Full duplex means data flows in both directions simultaneously.) Confusing, isn't it?

Top Speeds

Note that even the high-speed 34.4 Kbps modems cannot exceed the 56.4 Kbps ceiling, due to the limited bandwidth of the current personal and phone lines. They speed advantage beyond apparent where transmitting data that is similar to the advantage of V.42bis' built-in compression routine. For example, pre-compressed .RAR files won't benefit much from the modems' increased compression to modems because, of course, they're already compressed.

MNP-5 functions like some early pre-compressed files, which confuse the protocol. MNP-5 then repeats the file instead of compressing it. MNP-5 units should turn off MNP-5 before downloading compressed files from BBSs.

In speed race between MNP-5 and V.42bis, the former wins. MNP-5 units are consistently faster in fact, and use a more efficient compression algorithm. Note that V.42bis modems have speed advantage when talking to MNP-5 units, because they automatically shut down to MNP-5 speed.

The best way to think of modem-to-modem compatibility is in terms of their common denominator. For example, if a U.S. Robotics proprietary 147000bps modem was talking to a 9600bps V.31 modem, they could not communicate at 9600bps because the two protocols are not compatible. They would immediately drop to 9600bps where communications would then proceed smoothly.

As V.42bis unit connected to a V.42, they would communicate at 9600bps, but without the data compression found only on the V.42bis.

Similarly, if a proprietary 34.4 Kbps V.31bis modem calls a BBS that only supports 500/19200bps, it, after a five-minute 19200bps session, attached to the two computers will connect at the maximum speed common to both: 19200bps. As you can see, even with faster modems can still fail, they just may not take full advantage of their investments.

Cable Details

There are some details to consider when purchasing a high-performance modem, such as getting a serial cable that supports "hardware handshaking." Unfortunately, there are buyers here to go into the details (often it is not clear a person known in flow of cables that modem is able to tell the computer

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ments, User ID, and Password security. User Rights security.

Graphics/DBMS: BY Design Macroprocessor Associates Inc., 1770 East Lynco Circle, Tampa, FL 33610. Host version: CEM, Schema version: CEM, Standard: CEM.

Features: Multiple Remote terminal connection. Knowledge file transfer. Chat mode. User ID and Password security. **Client/Server:** Norton Landolt Corp., P.O. Box 4050, Santa Clara, CA, 95050. Phone: (408) 994-6150. Host version: CEM, Schema version: CEM.

Features: Knowledge file transfer. Chat mode. User ID and Password security. **Client/Server:** The Macrovision Software Division, 500 East Capitol Drive, Norwood, MA, 02062. Phone: (508) 925-1900. The main difference between these two systems is that the Macrovision system is a more sophisticated user interface. This is the main reason for the difference in price. The Macrovision system is a more sophisticated user interface. This is the main reason for the difference in price.

Features: Knowledge file transfer. Chat mode. User ID, and Password security.

All the communication programs we tested performed their functions well within acceptable standards and there is very little difference between each program. The only difference we found was in the speed of the user interface when using their own custom terminal program on the line.

The ability to access the host computer with either communications software or a terminal emulator is a major advantage. Both Remotely and Macrovision have the ability to use either a terminal emulator or a host computer. This is a major advantage for the user interface when using their own custom terminal program on the line.

At the time of the test, the Macrovision system was the only one that could be used to access the host computer with either a terminal emulator or a host computer. This is a major advantage for the user interface when using their own custom terminal program on the line.

The system is the best we've seen made up to date. Both Remotely and Macrovision are the best we've seen made up to date. Both Remotely and Macrovision are the best we've seen made up to date.

All four programs offer a terminal emulator, a host computer, and a host computer.

Terminal Emulators

The most basic of computer communications is a terminal emulator. These are programs that allow you to connect to a host computer. They are used for a variety of reasons, including the fact that they are the most basic of computer communications.

Graphics/DBMS: BY Design Macroprocessor Associates Inc., 1770 East Lynco Circle, Tampa, FL 33610. Host version: CEM, Schema version: CEM, Standard: CEM.

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The Virus Threat

Viral Programs and BBSs

by Robert Michael Stoltz

The general public seems to have the impression that the most serious threat to their systems is the virus. In fact, the most serious threat to their systems is the virus. In fact, the most serious threat to their systems is the virus.

To understand why, there are two major "types" of viral programs that infect program files, and then they infect the host system of data. The first "type" of viral programs, as a result of the host system of data, are the most serious threat to their systems.

The host system of data, however, is the most serious threat to their systems. The host system of data, however, is the most serious threat to their systems. The host system of data, however, is the most serious threat to their systems.

Why does BBSs have more in the "virus" than the host system? The first "type" of viral programs that infect program files, and then they infect the host system of data, are the most serious threat to their systems.

Why does BBSs have more in the "virus" than the host system? The first "type" of viral programs that infect program files, and then they infect the host system of data, are the most serious threat to their systems.

Communications will use the most sophisticated language and most sophisticated system to provide the most sophisticated user interface. This allows a more sophisticated user interface to provide the most sophisticated user interface.

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Conclusion: When choosing a terminal emulator program it is important to make the program with your needs. If you want a simple and reliable communications program, Gold's Communications is your first choice. If you want a more sophisticated user interface, Gold's Communications is your first choice.

When choosing a terminal emulator program it is important to make the program with your needs. If you want a simple and reliable communications program, Gold's Communications is your first choice. If you want a more sophisticated user interface, Gold's Communications is your first choice.

people automatically assumed the program was the most

(Indeed, the status of BBSs in the late 1980s was such that it was not unusual for a user to be asked to provide a password to access the system. This was not only a security measure, but it was also a way to ensure that the user was who they said they were.)

Most BBS systems were not only sophisticated, but they were also sophisticated. Most BBS systems were not only sophisticated, but they were also sophisticated. Most BBS systems were not only sophisticated, but they were also sophisticated.

It is possible to get a host system of data, but it is also possible to get a host system of data. It is possible to get a host system of data, but it is also possible to get a host system of data.

1) The way you implement an on-line program is the most important. The way you implement an on-line program is the most important. The way you implement an on-line program is the most important.

2) Don't make any software that doesn't have good documentation. While you can make any software that doesn't have good documentation, it is important to make any software that doesn't have good documentation.

3) Try to make any software that doesn't have good documentation. While you can make any software that doesn't have good documentation, it is important to make any software that doesn't have good documentation.

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Where's the "Good Stuff"?

A User's Guide to the Online Scene

By David Horne

In Vancouver alone there are over 150 Bulletin Board Systems (BBS's) waiting for your PC to call. Add to that the commercial services like B.C. Business Network, Data Prodigy, Glink, CompuServe and others and you have an incredible variety of services at your fingertips.

For many, the choices are so vast that it's somewhat daunting. PC users from v-surfing the contents of text a few of them. I have spent many hours operating hundreds of BBS and online services the past few months and there are a number of these that are very valuable from both business and personal points of view. Assuming you have neither the time nor the inclination to go through this semi-discovery process, I have prepared a summary of October 1991's best on-line services available today.

If you wish to be ahead on "teletrends in Online Computing" services, and learn more about them, visit other

interesting online "jewels" contact Gordon Harris at the Internet Board at the end of this article.

For those of you who are new to online computing, practice with one of the many free local BBS's. You will find that most of the BBS's look and operate very much alike. With this knowledge you will become much more efficient at navigating and learn to use valuable time. Only after you feel comfortable with these local BBS's should you venture into the much bigger and more expensive arena of commercial online services.

A database is only as good as the quantity and quality of the information it contains.

Favorite Bulletin Board Systems

Which BBS is worth a gander? Select a BBS that has several telephone lines, a large message base and a large number of downloadable files (programs). Here are my personal favorites.

Name	Number	Cost
SPYCE (LSE)	876-1214	\$24/year to \$600/year (TAT)
Basic Is Computers	344-0000	Free
Book-File	738-5403	Free
Supplier/Supply Core	273-0000	Free
Send A Message	410-0400	Free

How large are these systems?

Let's look at the general features of MINDLINK as an example. The system contains:

- 200MB 16M Compaq with 128K of RAM
- 20 Serial Ports
- 1,000MB (1 gigabyte) of hard drive space loaded with downloadable software
- 15 publicly accessible telephone lines

What does it offer?

Local Electronic Mail
International Messages
International Electronic Mail
File Transfer
Online Games
Password Service
Local Directory Service

What is Your Favorite New Online Service (Local)?

Recently the Vancouver Public Library came out with one of the best online services I have looked at so far.

Locate any book in the entire library system by author, title, subject or key word. See complete descriptions including number of copies, local status by branch and "hold status" it will even allow the operator to place a book "on hold" for later pickup!

Whether you are in your children's homework, school, or on a parent's tool, this service will save you a lot of gas (and time) in a very short period of time. You will never again drop a book from only to have that frustrating statement, "The sorry, that book is out of this moment." The telephone number for the Vancouver Public Library is 604-683-1000 (1600 type).

What is your Favorite Government Online Service?

Without exception, the "best" of the above the B.C. Business Network. Operated by the B.C. Credit and Development Corporation, a consortia of over 120 services in 6 major categories including Business Opportunities, Information

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TELECOMMUNICATIONS

However, Facts & Figures, Computer Data Base/Directory Services, News and Customer Comments, Recent Agriculture Statistics to World Bank Reports, Computer Information to Professional and Federal Tender Opportunities, you will find it all here. The cost \$25/hour or \$0.50 per minute. Contact E.C. Business Network during business hours at 1-800-441-4281 for further information and a free subscriber list.

Not to be forgotten is the Government of Canada Supply and Services Notices of Procurement Board. How confusing is that title? It should have been called "The Complete Listing of Government Tender Opportunities." It includes the Procurement Planning that they want to purchase.

After the description of each "tender" you are asked one question: "Would you like a Full Package (Y/N)?" "Synchro-Tel," the computer will respond: "Your Full Package has been sent." Within a few days you will receive the complete full package on your desktop. For additional information call (800) 364-2460.

What is your Favorite Commercial Service?

This great ability of online computing, Compulink, will clear issues? It contains more information, databases and software than any other. Again, it will cost you about \$4.00 per minute which is smaller to most other commercial services, but you can't match its reliability and its supplies in North America. It is in large and offers to many existing

services that I strongly recommend you purchase a Compulink Account [http://] from your local computer book store.

Since Compulink services are the software support services, such as Lotus, WordPerfect and Microsoft. If you use a Windows 3.0 user you will be very interested in the Microsoft Windows Forum (page C2100017). It contains hundreds of Windows 3.0 compatible programs including games, utilities and a wealth of sample just powered Windows enhancements.

Another popular service of Compulink is the Citi Forum. With over 40 channels, it is possible to converse with other PC users from across the world by telephone land number! It is no different than talking to someone over the phone except that you listen with your eyes and speak with your fingers (typist). Recently, I asked the Citi person in a Citi Forum where they were calling from. Two were calling from New York City, one from Florida, one from Ohio, and one from Kentucky, Ohio!

Finally, the Reference Library is excellent. Whether you prefer the American Encyclopedia, computer products catalog, Computer Reports or locate a book using Alpha/numeric here and much more.

Just How Valuable is Information?

Information is the single most powerful ingredient in a successful career or business. The person or business that is armed with better information has an incredible advantage over the competition. However, you must remember that your success may hinge on information you need, as long as you know where it can be found! You've tried in Online information databases like Compulink and the E.C. Business Network are the best examples of being better informed.

When I speak about online services and the incredible variety and quantity of information they offer, I often have thousand questions: "Yes, but what would you use it for?" Let me provide you with five actual cases where online services made the difference between success and failure.

Example #1 The Job Interview (A true story)

Steve (not his real name) and one other candidate reached the "shortlist" for an excellent position with the most prestigious firm in the industry. Steve quickly observed the other candidate while they presented their "five-year plan" and "what I can do for your company" speeches while waiting their turn and generally looking frustrated. However, Steve waited for his interview which complete most of his confidence. Why? Because his online service to do a little background homework on this company. The competitors did not, the new owner of the business history of the company, the financial picture, present products, its quality, and the backgrounds of key company officials, including the person conducting the interview. With this information, Steve was in a position to ask insightful, intelligent online interview questions. Combined with his well-thought-out confidence, he

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FAX/MODEMS

LAN FAX GATEWAYS

by Dave Gilson

Monday morning? When you're in your office early because you have to get your 9:00 a.m. document to Toronto in some telephone charges, probably before 9:00 a.m. You skip the delays that you brought from home into your office PC and quickly print your document on the office fax machine. While the document is printing you grab a cup of coffee and head over to the fax machine.

Then you see the fax line—four people running frantically around while your office fax machine slowly crawls out for your morning fax. You know that they need your report in Toronto for a scheduled lunch meeting.

How do you feed a fax gateway installed on your Local Area Network (LAN)? You could have that document flow from your PC to the LAN, but a fax gateway and the fax gateway would have taken care of the rest, for the case where you don't have a modem at home, the fax gateway simulates your

modem to first print the document, then send it to the fax line and feed your document into the fax line and wait for the fax machine "transmission in progress." Instead you can send it directly from your PC to the fax gateway and then forget it. Text and images are converted to faxable format at the fax gateway and then transmitted during your do other work.

Now, you may ask, what is a gateway? A gateway is simply a computer, router, and its software that permits two computers using different protocols to communicate with each other. In our case we have a LAN on our side and a fax machine on the other side.

Alternative Routes

There are four basic approaches to the fax gateway solution:

1. Most of the fax solutions are host-software packages that are installed on a separate PC on the LAN. Most will be a proprietary design of hardware and software in a combined package from the same manufacturer.
2. In some cases the fax software will be installed on the fax machine and independent. It will use software written by a software company to perform on multiple LAN platforms and the most popular hardware on the market such as Intel-based AT/XT, The Complete Fax/1600, Channel Link, and so on.
3. Some packages will support host/PC/DA Communicating Applications Specification (CDS) protocol.
4. Some packages will be proprietary. Some fax gateway forms a gate-

way that enables you to send fax and E-mail addresses to the same machine that handles the software on the system. In all of these cases you can E-mail packages you don't need to fax to a fax gateway directly. Most fax gateway packages are only supported on Novell and interface with the fax gateway through Message Handling Service (MHS). MHS is a software program that permits reliable movement of electronic messages from place to place. As a message-handling service, MHS operates according to a set of delivery services that you are familiar with. In our case the LAN delivers a package, if the package is an E-mail message it will be sent attached to its destination, but if it is a fax message it is sent supported by the fax gateway and sent as a fax to the fax machine.

4. Standalone fax gateways. This is usually called "LAN ready" fax. No need to fiddle with dip switches or jumpers—just attach the fax to the LAN and place in use.

It Is Better to Give Than to Receive

The fax gateway on the server is at a constant address, as is a PC on the network containing a fax machine. Both the fax and the gateway software. When the fax machine can be added to your file server.

Depending on how well the PC can be a PC/XT, 286 or a 386 machine. Some require a hard disk, others can store on your file server as much as the total 386, to 1024, of some storage—most files with graphics or pictures as shown can be much larger.

If you need to print images that you receive, you will need at least 1.5 MB of memory in your hard processor.

Some fax boards allow for an optional scanner to be attached to the fax board itself, this will be in a stand-alone environment. For fax machines on a LAN send the message on one channel where the fax gateway. Make sure that the file produced by the scanner is in a format supported by your fax board and gateway software. If you have to use a lot of addresses specifically for the purpose of faxing, you are probably better off sending those with a regular fax machine.

Fax gateways are especially good for sending faxes. Sending faxes is more complicated. Most gateways require a human administrator to create incoming faxes, which can cause delays. Several medium office fax-based faxing (MFD), the phone company's fax line (FAX) gateway is a FAX, not a fax, sending incoming faxes directly to each user. This server requires a dedicated trunk line for each user and those lines are more expensive than regular telephone lines. There is yet another solution which is cheaper but more complicated, fax numbers punch in a special

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designed code for each recipient and the gateway routes the incoming fax to the proper endpoint. This solution is called Real Time Mail Frequency or RTMF.

Four Products

In addition to the four products mentioned in the existing fax gateway on the market, I chose one product from each of the four categories described above. I also chose to compare two Canadian companies who have a presence in the market niche. It is important to note that there are many other good products out there and the products cited here are not endorsed by me. In a recent article in PC World (March 6, 1991) there is a money guide to buying fax LAN Fax Gateways. Every company needs to carefully assess their needs and choose the best fit for that need.

SCI-NET 3000

• Manufacturer: TGI Technologies Ltd., 167 East 1st Avenue, Vancouver, B.C. Canada V5T 1C3 (604) 675-6656 FAX (604) 675-6654

- Run: Manufacturer: Compability, GCT Group 33 Galing Method, Doner Microsystems, 2800 Bayview Rd. Mississauga, Ont. L4W 5G6 (416) 673-1100 fax (416) 673-1101 compatible (AT/IBM) Address Selection Day Services (24 Hours) Address (Address) Multi Board Capacity Up to eight
- Price: \$2,194 includes software to handle up to 4 lines, 14,000/17,000 bps, each additional board \$1,899. Other options available
- Warranty: 1 Year
- Key Features: Fully Novell Network compatible, remote made a network node, fax text, tone and graphics, accounting/billing, fax timer, automatically fax notes, personal or corporate phone books, automatic re-dial, dialplan/faxing, fax to auto-redial, network access.

TGI Technologies is a local company entering the fax gateway market. The SCI-NET 3000 is their PC LAN Gateway product which started shipping in December 1990. SCI-NET 3000 is currently in version 1.2.

The SCI-NET 3000 does not work with an E-mail package but will work with a FAX gateway. For information on the LAN you can use a networker similar to an E-mail package and send messages to other LAN users. For more details you can rely on fax.

Let's assume that you need to fax a message to an appropriate customer, along with a covering letter. Now if you SCI-NET 3000's forwarding function to write the covering letter, then you can print the brochure, and mail off the pages off to your customer.

Here is how you would do it. First you start SCI-NET 3000. You are a list of all the mailboxes in the system, and you choose your own to work on. Once in your mailbox, you choose to work with folders. Each folder in your mailbox contains one fax, which you choose to message to yourself. You insert one folder to hold your fax, and give it the name brochure. Then you enter the folder, which of course is empty right now.

Once inside the folder you select a Message, and find yourself in the Edit-Messages screen. This is a simple text editor which allows you to write messages, or import text from an ASCII file (which means that, if you wanted to, you could forward the message to your customer in your own and imported a fax to SCI-NET 3000 without having to print it out on a file). This is a short sample covering letter to you to make it clear that the message works. Once you have finished, you exit the editor and send fax to the address while SCI-NET 3000 converts your text into a double graphic image. Then you choose the new command and place the first page of your brochure in the scanner. You enter in all the pages you need, and each one becomes a page in the folder.

Once you've scanned all the pages, you find it complete as you move up the folder level and choose the Send command. You enter your customer's name, another number, and SCI-NET 3000 refers to append the fax and how successful to try all can't get through on the first try, and that's it.

NEW TECHNOLOGY 뉴텍 컴퓨터

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69438, 69439, 69440, 69441, 69442, 69443, 69444, 69445, 69446, 69447

FAX/MODEMS

If you have only one computer and need another printer, you will not be able to choose from enough possibilities of the lines you need for a fax board. Also, if you only have one computer and you need for many functions you may find a fax board interesting.

There are not all the machines where a fax board is not adequate. So, where is a faxboard? If you have a local area network, and you already have a standard fax machine for business use material, you will find a fax board (fax board as a LAN workstation) is not suitable tool.

A fax board gives you a way to connect your graphics or desktop publishing files. These devices generate high-quality files for marketing purposes. In addition, you can control your fax board while in other applications, which allow you to fax files straight from your word processor or graphics or desktop publishing software to save the machine.

Fax board gives machines not all the ways right now. If you already have a local printer hooked on your network, you can have plain paper fax capability just by adding a fax board to your network.

Regardless if hooked to the Gamma Fax Board with Gamma Fax, Gamma Net, Gamma Server and Gamma Page Buffer, you have fax board to save you from all the options you need.

Locally we received Gamma Fax, Gamma Net and Gamma Server. We use a HP LaserJet for our printing and all our software is set up for this. Without Gamma Page you cannot connect

to any fax print jobs to send or receive. This application makes function of the system for it. Make sure you have all the components to complete the system you want. Do not buy the bare minimum, for most you will only have a machine option.

Installation of the Gamma Fax system is not simple. The problem lies in the lack of knowledge on the part of the user. However, I have installed the system once, it would be a map to install a system. However, I could not receive several purchasing this product from your local computer store.

Get it from a computer or VAX who has experience with this product. It might cost you more but the savings is worth that will be great.

Once Gamma Fax was correctly installed, I was surprised. I could fax a letter to my supervisor just a few keypresses. I could send multiple messages even faster. Now I can communicate with my clients with ease and I also have plain paper from the same phone connecting the other end, so I won't lose it.

After trying out the Gamma Fax as a fax system on my network, it is going to be like pulling teeth from a mule to get me to get it back. I want to continue, though, as I do not believe this is a product for everyone.

I believe this should be your second fax machine and it will not replace the standard fax machine. I also am not convinced of the usefulness of facsimile as a cost-effective setting. However, for the office with a network of any size and any amount of business conducted by fax, Gamma Fax is a good investment.

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OS	Windows
operating system	Windows 2.03, 2.11, Amiga*, Mac*, Linux*, Vector*, D3D*, IBM*, Lotus*, Corel*, and many more.
RAM	80MB internal, 500*, 80*, 400*, 200*
display	640 x 480 VGA display
storage	5.7mm disk pack
weight	4.5 kg
height	8 cm
battery	2 hours of continuous operation
charging	within 8 hours

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Although this is the number first placed within your system, preferably in a prominent location, it is nothing more than getting the high-pitched whine of a modem as you sit at a desk. We make every effort to ensure the accuracy of the list at press time. The reality of more and more business that there is a high turnover. The telephone number listed below is retransmitted to a new telephone number when a company relocates a dedicated BBS telephone number. Be kind to your neighborhood.

That's it! In the current version of the MIND LINE 9000 kit, if a system or line has gone down, or you have a 14400 B-C system that is not on the list, please call and let us know! MTAS (730) 374-2141, ext. 300-310, 300-320.



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TELECOMMUNICATIONS

from (data, data, page 8) under cover, or, I, see and attack output from main on application top-down for its outside area. Other features include: approved open access, inter-filing for transmission for user multi-line, a few to truly log showing point and communication and sophisticated decision for frequently called numbers.

Installation of both the Series modules and Modem look about three minutes. Luckily, there were no conflicts although some problems could occur with Modem from lower and could and could for other devices. Windows I don't not

currently support shared hardware interrupts (com2/com3) - com2/com3. Diana Marshall. Also, as much as I can, I think, Windows will not only work on modern that runs the benefits of chips.

Finally, both products are directed, both have hardware data documentation, and both are performed and complete to extend how various settings for you to discover the bugs and report to "Customer support" so the developer can sell you version 3.0X as a "technical support."

UNIX

Once Again HP Stands for High Performance

by William P. Bar-

In March, Hewlett-Packard announced a line of RISC-based Unix workstations. The new products will undoubtedly put increasing pressure on competitors to shift from power to increase development efforts.

The new line of workstations is based on the HP-PA (Precision Architecture) RISC chip. It is similar to the PA line of chips that has employed as their line of servers and workgroup computers. This instantly offers customers great mode of support, especially for the new HP Apollo 9000 Series 700 workstations and the rest of the PA line. As a result, over 1000 software applications are available for the new products.

There are five 700 workstations: a low-end of price performance that will have professional office to the workstation and high-end personal computer at work place. I would like to see the HP-PA and Motorola 68000 will display almost 40% the new and other workstation manufacturers will have to do so that it can be 50% to at least look competitive.

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More Hot Hardware

There are three models of the new workstations. They are desktop configurations and cost is a definite factor.

The Model 750 is a desktop unit. For C\$15,900 (a suggested list), you get a desktop workstation with 16-MB RAM, stereo graphics and a 20" monitor. Standard equipment includes: Ethernet card, an 802.11 port, a Centronics port, SCSI-2 adapter and an optional EISA slot. Five performance specs are: 55-MHz/250k, 87-MHz and 17-MHz/1.05. A hard disk and colour graphics can be added to the system.

The Model 750 is also a desktop unit. For C\$15,400 (a suggested list) you are provided with 16-MB RAM, 10-MHz hard disk, stereo graphics and a 19" monitor. An Ethernet card, SCSI-2 port, an 802.11 port, a Centronics port and an EISA slot are standard. Performance specs are:

75-MHz/250k, 76-MHz and 22-MHz/1.05.

The desktop Model 750 is ideal to a workstation/server. For C\$24,900 you are provided with 16-MB RAM, a 600-MHz hard disk, colour graphics and a 19" monitor. Standard equipment includes: Ethernet, an 802.11 port, a Centronics port, an Ethernet connection and a SCSI-2 port. Performance specs are: 75-MHz/250k, 76-MHz and 17-MHz/1.05. The kind of horsepower into the Model 750/750, using 600-MHz (an 80-MHz software simulator), provide a 100% version performance at the speed of a 75-MHz/250k/1.05, the workstation runs 60-MHz/250k. History and more reliability than a 100-MHz unit. Because of that there will be significant speed and a more efficient time per year to when high speed RAM prices drop, which there is a great first.

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How to Buy a Cellular Phone

[illegible]

Cellular phones are made possible in most metropolitan areas thanks to networks of low-power nodes, so-called "cell sites." Today, anyone who is away from their office and speaks with clients or customers should have a cellular phone.

Before you make a call on a cellular phone, you send a radio signal to one of several towers that indicates that the cellular company sets up as part of its service. The call is then routed to the carrier's switching office, where the signal is transferred to the regular land-based telephone system of your local phone company.

The price interval, all prices given within all ranges of the call will stand as maximum price and

The signal is picked up by most barbershops still, especially keeping you in constant contact with the main filing office.

Chaffin, N. S. / 2000

Cellular service is based on matched-gating slot-based radio frequencies in the 800-MHz megahertz frequency band. A series of improved transmitters, strongly limited, makes these frequencies available to cellular telephones in the coverage area. Computer-based automatic switching accepts calls, connects them to the called number and handles additional functions to assist the cellular phone work. The name is derived from the fact the signal of each transmitter creates what is called a

graphical cell, from three to 10 micrometers in radius. The average term is composed of a group of cells and a septate canal system which hands off coils from cell to cell as the coil moves. There is no correspondence in the source as the coil is handed from one cell to the next.

What to Look For... and Look Out For

[illegible]

In general, cellphones fall into three distinct categories: cell phones, flip phones and handheld phones. The former, as we all know, are modular in design and may be converted from one type to another. Each design trades off size (and hence usability) for power or ease of use. Here's what to look for:



Cellular Telephones: From Privacy to Privacy 11

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Typically providing 8 watts of power (the most allowed by law), car phones provide the greatest reception and transmission range, and the clearest sound. The best of all use a roof-mounted antenna, however most people find a glass-mounted antenna easier to find, and less much more practical. Virtually all car phones come with a "handset kit," consisting of a microphone on the mace, and a speaker on the handset. Users start at around \$200.

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Essentially, a computer can place these bulky 3-to-6-pound units in the refuse world where "luggables" are portable computers—yes, moving them around, but they're big enough that you may not want to.

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[illegible]

CELLULAR PHONES

they pack. If you plan on moving the cellular phone from point-to-point infrequently, a transportable is a good bet. Transportables start at around \$600 and obviously have the cellular antenna external, but are much popular in fringe areas (where it takes longer to pick up), due to their longer range. Look for a unit with a long battery life and damage resistance if dropped (the second this year, the latter might be hard—or at least expensive—to test.)

Conversion Kits

Some units have conversion kits that can adapt them for day, transportable and household use. Unfortunately, the conversion kits are often more expensive than a new phone. The most flexible household/transportable units have a switch to toggle between 3-watts and 0.6 watts for car/transportable and household operations respectively. Look for a unit that enables you to include a unit's car conversion kit (3 watts phone, household) and a separate household conversion.

One mark out at the Motorola-sponsored event (about \$2000). Other conversions include the Dismountable (MS. OK) models 600 and 700 (CBI's replacement for the popular but now discontinued Model 700) and virtually all Motorola portables.

Household phones

Usually anything on at a point or less, these phones are in many the most expensive and useful categories of cellular technology and represent the

fastest-growing segment of the market. Virtually all have features like memory for holding names and numbers (great for white-out-driven speed-dialing) and longer talk times between recharges. With handhelds, you are more limited in the standard features you can bring along with you, but you can still use the more powerful transportable or car phone. In short, of course, this isn't a problem.



Cellular Telephone From Motorola

Why only 0.6 watts? It seems that the US FCC and Canadian ICRC decided it didn't want 3 watts of power over radio frequency being emitted from a unit pressed up against our heads (there is a growing body of scientific evidence to support that decision, incidentally). Unless you're used to regulatory-minded engineers, the FCC and ICRC don't know if you go out at the full 3 watts.

Handhelds typically range from \$600 to \$2000. At all the prices I collect, one caveat kept coming up: when I asked the salespeople to show their most popular model, I saw Motorola 6000s.

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NEC

CELLULAR PHONES

Motorola, according to a Cell City spokesperson, I spoke to, expects a 50% share of the cellular telephone market, both nationally and in the greater Vancouver area. The budget-priced 9000000 sports a 15-minute memory and a 3-year warranty, and sells for about \$1540. He told me that it usually sells with a \$20-30 "year service package" that gives you a "free" 30 minutes of service per month.

Other phones included offer a variety of service packages. For example, a \$1600 model has 240-30 minutes a month, which includes no free time, \$16/30, which includes 30 minutes of call time, and \$99/30 which includes 120 minutes of calls.

Tiny Phones

When asked to name the smallest cellular phones, most people named the \$1490 Motorola PT7500, which strongly resembles the flip-top communicators used by the crew of the starship Enterprise on the "old" Star Trek. The 30-gross PT7500 is small enough to hold up and fit into a shirt pocket in jeans. However, if you don't mind the slightly larger size, you won't notice any difference in quality with the \$10000 at about 1/3 of the price.

Other even smaller phones include the PT7500G (Motorola Handheld Cellular Mobile Telephone) and the 200-gross (with ultra-light battery) Pocket Communicator from Fujitsu.



Pocket Communicator From Fujitsu

Typical of the current generation of these tiny, feature-laden devices is the Fujitsu Pocket Communicator (shown at right), which, if I had not yet been impressed by the DOG. With the help of some "low time" courtesy of Japan's communications, I tested the diminutive phone and was amazed at how many features were programmed into the unit, including volume control, auto off and on, auto mute, auto alert, 140-character memory with 16-character alphanumeric, last number recall, call restriction and security lock features.

In addition to the phone there is a strength, battery level (jacking, no status), call duration (with both a timer and audible alert) and signals to show when the phone is in a different "working area" or outside of a cellular area. The 40-character display can store and recall both alpha and numeric codes. The phone even supports two expanded transmissions, where the phone is meant to speed up responses to save battery life. The feature delays answering calls until 30 seconds after the last keypress.

The Fujitsu Pocket Communicator comes with an internal battery (30 minutes) battery and a dual charger. Optional accessories for the unit include an

ultra-light (45 minutes talktime) but they need a built-in power adapter, recharge adapter with handsets, leather case, cables, battery charger, leather carrying case and rapid charger. Using the rapid charger the ultra-light battery charges fully in 1 hour, while a recharge of the standard-size battery takes 2 hours.

The unit has a powerfully black finish that is usually very attractive but looks a little worn and used. Some other brands have a slightly more modern finish for the reason. Contact: Fujitsu Canada Inc. 800-283-4716

Phone Considerations

One consideration: I have a personal definition of property of high-tech property to have features that look great on paper, but don't perform well in the real world. Usually, it's because the features are poorly designed and/or implemented. I suggest that you actually try a feature that is important to you before you choose.

Your best bet would be to rent, lease or borrow the cellular model you intend to buy for at least a few days or get a test for it. Features are the first and a convenient and broad range. Many dealers rent or lease phones by the day, week or month, at rates ranging from \$75 to \$125 per month. Cellular One Rentals, Inc. for example, rents a handheld phone for \$5.95 per day, plus \$1.50 insurance, \$14.95/month (for 30 minutes) or \$19.95/month (for 60 minutes). Call time is charged at \$0.35 per minute.

Apex (Communications Inc.) has a service package that includes a handheld portable and 100 minutes of service (including the DOG for the first and monthly charges) for \$44.95 (plus tax and deposit). Apex also has purchase and lease terms.

It is also worth noting that cellular phone prices have dropped to less than half of what they were a year ago, but the service charges have not decreased. Expectantly, some dealers make so much money on them and sell service packages that they sell the phones at a loss.

Service Considerations

In terms of service in North America, there are two competing cellular services, sometimes in competition to each other. In B.C., the service is Cellular and B.C. Cellular. The latter is operated by Rogers Communications Inc. (the latter is a part of the B.C. Tel-Group).

In other provinces, a number of services exist, with Cellular competing against the other phone companies. Interestingly, I found representatives from the phone companies involved in discussions to be much more concerned about being sued by The Firm than the Cellular people (To be sure, B.C. Cellular was much more efficient and thorough in supplying information for this article.)

B.C. Cellular, which belongs to B.C. a more extensive network, chose to offer continuous coverage of the Lower Mainland, through Chilliwack past Hope to the Okanagan, Kamloops, Merritt, Vernon and the Coquille. The company then has coverage of the entire coast of Vancouver Island, up to and including Campbell River, and on the western mainland serving Squamish, Whistler and Prince George.

Across the nation, cellular service

CELLULAR PHONES

reportedly now extends along 70% of the Trans Canada Highway, with good coverage in 40 major centers, across virtually all of the northern portions of the province.

In a recent interview, the president of Canadian Cellular said the company has spent \$13 billion on Canada's infrastructure and buildings to cellular networks (although he is recovered from Canada's progress the figure is \$400 million). However, cellular is not always as expected. Easy-to-use cellular phone that you pay, pay, pay.

What You'll Pay

Remember that your pay not only for the phone, but also for the phone service itself and every call—both on- and off-network (with one exception: the only two minutes where you don't pay for an incoming call is if both parties subscribe to the same mobile service, in which case outgoing calling party is billed for the call). At up to \$0.40 per minute (short-term rentals are often even higher), most people can expect to bring up a handset within a month or so after they get.

Cell Costs

Where you buy or lease a Canadian-made phone, you typically get 30 minutes of on- or off-network. Each month thereafter, you'll pay a flat fee (the one averaging \$100 to \$150 a month is of just 1/10), which gives 60 minutes of on-time and off-network, call following, call tracking, three-way calling, busy transfer and on-screen keypad, plus a battery of other services like three 411 and 911 ser-

vices and 24-hour customer service.

After the first 30 minutes run out, additional Canadian time starts at \$0.40 a minute at peak times, with a one-third reduction for non-peak times (i.e., after 8 p.m. and all weekends, the price drops to \$0.20 per minute). Then the 60-minute rate, for the same, becomes progressively less expensive. For example, the next 60 minutes cost \$0.45/min, then 60 minutes at \$0.40, 120 minutes at \$0.35, 180 minutes at \$0.30, then all additional time at \$0.25 per minute. At the bottom night and weekend prices are 1/3 off these figures. A \$40-50 off-peak option allows free unlimited off-peak calling. Canadian Cellular also provides the above-mentioned rate structure (for those prices, anyway) by signing up on a new price-protection plan.

B.C. Cellular Costs

Buying or leasing a phone from a company that provides service through B.C. Cellular will usually put you three service options, ranging in price from \$30.00/month to \$60.00/month.

For \$34.95 a month, the Basic Service plan includes an free loan, and costs \$0.20/minute. No off-peak usage discounts apply, although price includes on- or off-network and 411 and 911 minutes. The Preferred \$30 cost \$20.95, includes 30 minutes of call time, with additional time at \$0.35/minute (peak) and \$0.25/minute (off-peak), becoming progressively cheaper (as above) as usage limits increase.

The third option is the \$49.95 which

includes 120 minutes of calls, with additional time charged at \$0.25—less than half the cost of the \$0.40/min "Basic Service" charge.

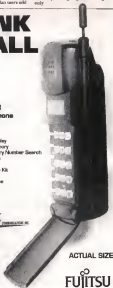
Other services are also available, such as call forwarding (Due to Preferred Cellular customers, Basic Service plan users will

\$2/month), three-way calling and call waiting, much like the comparable services offered by the phone company. For an extra \$2.50 a month the cellular service can also limit service to local calls only, or charging for incoming calls only.

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by Henry Lauzon

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Price: Available in Canada for under
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Product: PROFESSIONAL PAGE V.1.3
Publisher: Gold Disk, Inc., P.O. Box
759, Streetsville, Ontario, Ontario
L2M 2G2
Price: Available in Canada for under
\$200

Product: SAGON V.1.1
Publisher: Saxon Industries, 14
Pictouville Drive, Repent, Ontario
K2G 5A8
Price: \$249.95

There's something about seeing your words on paper that is satisfying. Because of this, desktop publishing applications have a tendency to grow beyond users' wildest dreams. It often seems that, once a user has seen the possibilities, everyone wants to get into the act.

For this reason, when you're shopping for a desktop publishing program, it's not one or two but a program that will only meet your present needs but one which will continue to serve you in the future. Although some cost more than others, not great publishing programs are inexpensive and no expenditure on one should be looked upon as an investment.

All these "high-end" desktop publishing programs for the Amiga have recently won frequent major awards, and most of these are available on both the Amiga and IBM compatible PCs. In this article, we'll take a look at these programs to see which one is best for you. The choice of which to buy is up to you.



PAGESCREEN 2.1

When doing reviews, I try to approach each program as a "new user" by making myself the complete novice, able to publish that may build the company. This was difficult to do with PAGESCREEN because I've owned and used this program, which was advertised as a rival to the MS-DOS "Writers" word-processor that for \$50 and no old PAGESCREEN disk.

Early reviews of the program were obviously unfinished. The program was available and easy to use, and many of the promised features either didn't materialize or weren't worth it. At last, however, the updates were free

and, as improvements actually were implemented, the program gained a fairly large and active "fanbase" following, particularly among non-PAGESCREEN users who found it to be proprietary software that was a way of obtaining a crisp and professional output from very inexpensive desktop printers.

The big news about version 2.1 is an increase in compatibility. PAGESCREEN will now accept most word processors from a variety of sources (including Macintosh and MS-DOS formats). It will output both "native" and "Intel/Intel" Compost-compatible fonts (for the cheap printers), as well as almost all PAGESCREEN fonts and components "into" files in the Adobe format. The program can also use most of the output fonts in the Professional Page memory package and can utilize graphics produced with Gold Disk's Professional Draw. A manual and manual is included in the version, as well as a handy reference card.

I especially like the improved graphics handling feature and PAGESCREEN's ability to import graphics in a "picture screen" from which portions of the graphics can be selected prior to being incorporated within the program.

Only a few bugs and wrinkles are present. The most serious PAGESCREEN's tendency to "lose track of" portions of graphics or graphics on medium-sized documents (not only on-screen but in the printer output). As well, a bug in the printing function causes the program to produce only part of the wrong number of pages. However, a tendency in Version 2.0 (not present in earlier versions) to refresh the screen after every keystroke has been generally corrected in Version 2.1.

On the whole, PAGESCREEN's design looks very outstanding and the program has available an extremely wide range of fonts, some in the public domain. Although the program is not on Macintosh systems, it is more or less portable.



Professional Page 1.3

Professional Page has, from the date of its last release, been regarded as the premier desktop publishing program for the Amiga and, in the face of increasingly stiff competition, has managed to maintain this position. While the program does not offer as wide a range of features as PAGESCREEN, it has unique capabilities and a seamless, top-down interface that is a pleasure to use. Especially convenient for layout purposes are separate on-screen work areas where por-

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Figure 1

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ANOVATION

A Monthly Newsletter From



ANO Office Automation



THE PLAN OF ATTACK



Contrary to popular belief, networking personal computers in an office is not that difficult. Only when not so qualified personnel get involved do true network screw ups occur.

In this article we will lay out a ten point plan to developing a network strategy. This list is based on experience and was designed so as to fit most installations.

#1. GET HELP

Avoid doing an entire network installation on your own. Bring in an expert who can give you a different angle on the direction you should go.

Besides, it never hurts to get a second opinion.

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APRIL IS CANON MONTH

(See Page 7 for Special)



#2. CHECK WITH THE TROOPS

Too often, network administrators avoid finding out what the people using the network want. By approaching them you will also discover any flames of insecurity they may have about networking.

As well, you will be instilling a sense of pride by making them feel that they were at least partly involved. Holding a group rap session is usually the best way of doing this.

#3. GO WITH EXPERIENCE

If you decide to let a dealer or VAR (Value Added Reseller) do the installation for you, be sure to make your selection wisely. There is no substitute for experience. Going with an untested vendor could end in disaster. If possible, see if you can visit two of their installations, and talk to as many reference sites as possible.

If you would like more information on this subject, see the article "Office Automation: Doing It Right."

Networking in the 1990's is an integral part of the evolution of computing. Be aware, however, that like with all things in business it must be done right.

in our May 1990 issue of ANOVATION.

#4. CABLING

Although cabling is the umbilical cord of any network, it is, in most cases, also given the least amount of attention.

Avoid falling into this trap! Planning out a cabling scheme which allows for clean expansion is vital. As well, be sure it is done by a qualified organization that deals strictly with data and telecommunications. Even if you are only hooking up two or three machines, it should be done properly and to building standards.

An improper cable job can lead

to headaches and lost productivity.

#5. TRAINING

Two rules of thumb on training in a network environment:

1. If you have your own network specialist in the office, individual user training on network functions is absolutely necessary. It never hurts, however, for people to have an adequate working knowledge.
2. If you don't have any network specialist in-house, and rely on your vendor heavily for support, be sure to have everyone trained on the basics, and at least one or two trained on more advanced troubleshooting and administration techniques.

One way in which you can streamline the network process and

reduce training time is through a well co-ordinated networking system such as Direct Access from Fifth Generation.

By relieving the user from learning network jargon and complex commands you are also reducing their stress level. Menu's also act as an excellent form of security and historically lower the number of problems

#6. HARDWARE SELECTION

Avoid being lured in by price. A killer deal could lead to a not so pleasant experience. Base your buying decision on the merits of the product and how well it fits into your strategy.

Some hardware you should seriously consider include a tape backup unit (with tapes of course), uninterruptible power supply (for the file server), and a modem (for support services).

#7. SOFTWARE SELECTION

Even though most of today's networks look and feel like DOS, that doesn't mean that any DOS based application will function properly on a LAN. Be sure that any and all applications you purchase are network aware.

#8. WHAT IF

What if, for a disaster to strike isn't good in business, and it certainly isn't good for networks. Be sure to cover as many "What ifs" as possible, and document your plans of attack.

#9. SUPPORT

Going it alone could end up costing you in lost time and money. Arrange for a service and support agreement with your vendor.

#10. PLAN FOR TOMORROW

As the needs of the users on the network will no doubt change, so should your network be able to adapt. Future factors such as the expected number of users, hard disk space, and cabling should be addressed before installation.

IN SUMMARY

Networking in the 1990's is an integral part of the evolution of computing. Be aware, however, that like with all things in business it must be done right.

If you have any questions please feel free to contact a network specialist at the ANO location nearest you, or call our National Head Office, Network Information Systems Group at (604) 276-8896.





PRONOUNCED NA-NOW



The arrival of the graphicsworking environment has spawned a desire by computer users to take a closer look at the monitors and graphics boards they are using (or plan on using).

Nanao (pronounced NA-NOW), a not-so-household name in the monitor industry, is a developer and manufacturer of one of the widest selections of display monitors in the industry. Established in 1967 to manufacture TV sets for Mitsubishi, Nanao didn't actually climb into the computer arena until 1985 with the development of graphics adapters and CRT monitors. Other achievements include the manufacturing of video products for NEC, Sony, and Akai.

Nanao's product line begins with a 14" non-interlace 1024 x 768 colour display system, and ends with their top of the line 20" non-interlace 1280 x 1024 CAD monitor. Manufactured and developed under the most stringent guidelines, Nanao's primary focus is on quality control. Each monitor goes through a vigorous set of safety, shipping, reliability, and picture quality tests before

they leave the Idato, Japan factory.

Developed with the user's needs in mind, each monitor offers

- ✧ Superb illumination, focus, and contrast ratio
- ✧ Stunning non-glare screen
- ✧ Easy access to major controls
- ✧ Low radiation emission



• THE NANA O • FLEXSCAN MONITOR SERIES

"We saw the Nanao product line at the Fall Comdex last year and were very impressed. The clarity of the picture is, in my opinion, unrivaled by anything on the market," exclaims Tom Chan, General Manager at ANO's National Head Office in Richmond, B.C. "Deciding whether or not to carry the Nanao product line was not a tough decision. Quite

simply they are the best bang for your monitor buck."

More information on the Nanao monitor line is available through your nearest ANO location, or feel free to fill out and mail in the reader response card at the back of the newsletter.





British Columbia Institute of Technology (BCIT)

PROFESSIONAL TRAINING

ANO / CCI Professional Training

Date	Course	Course #	Duration	Fee	Date	Course	Location	Fee
April 08	Intro. to DOS	53628	4 wks.	\$ 281	April 02	Intro. to DOS	R	\$ 165
April 08	ADCPAC G/L	53532	4 wks.	\$ 161	April 03	Intro. to Quattro Pro	R	\$ 165
April 09	dBase IV Level I	53544	4 wks.	\$ 161	April 04	Intro. to Windows 3.0	R	\$ 165
April 10	WordPerfect Level I	53557	4 wks.	\$ 161	April 05	Intro. to Microcomputers	R	**\$422**
April 10	Ventura Publisher	56899	4 wks.	\$ 161	April 09	Intro. to WordPerfect 5.1	R	\$ 165
April 11	Lotus 1-2-3 Level I	53566	4 wks.	\$ 161	April 10	Intro. to PageMaker	R	\$ 165
May 06	ADCPAC A/R	56024	4 wks.	\$ 161	April 11	Intro. to Word for Win	R	\$ 165
May 07	dBase IV Level II	53582	4 wks.	\$ 161	April 16	Intro. to Lotus 1-2-3	R	\$ 165
May 07	Lotus 1-2-3 Level I	53579	4 wks.	\$ 161	April 17	Intro. to Ventura Pub	R	\$ 165
May 08	Ventura Publisher	56852	4 wks.	\$ 161	April 18	WordPerfect Level II	R	\$ 165
May 08	WordPerfect Level II	53598	4 wks.	\$ 161	April 20	Intro. to MS DOS	R/K/E	Call
May 09	Lotus 1-2-3 Level II	53610	4 wks.	\$ 161	April 23	Intro. to The Maximizer	R	\$ 165
May 09	WordPerfect Level I	53626	4 wks.	\$ 161				
					** NOTE **			
					Other courses available in Lotus, dBase, Excel and Microsoft Word			
					R = Richmond • K = Kelowna • E = Edmonton			
Call BCIT at 494-1818 to register					Call your nearest ANO office for further information			

Q: According to the WordPerfect 5.1 manual, I should be able to use expanded memory. However, when I load my EMS 4.0 driver on my 386, and then run WordPerfect it hangs up. What can I do?

A: One way to avoid this dilemma is by starting up WordPerfect with the command w/p /32. This fools WordPerfect into thinking that it is actually using LHM EMS Version 3.2, and not 4.0.

The other way in which you can use EMS on many 386-based computers, is to invest in an EMS-specific memory board such as those offered by AST and Intel.



TECH • TALK

WITH
LENN AIC

Q: Quite often my computer will either hang or give me memory errors. Is this a hardware problem?

A: In many cases the culprit is dirty power. Power fluctuations are very common, and can cause havoc with even the most expensive of computer equipment, causing errors and even damaging the hardware itself.

We recommend using an ESP power filtration unit which handles one of the widest spectrum of power fluctuations. Unlike power bars which offer minimal protection, the ESP units are designed to protect your investment.





286 vs 386sx



If you are a moderate computer user, or your current applications don't require a huge amount of processing power but you need more than that old XT can muster up, you're probably going to come across a decision of whether to buy a 286 or a 386sx.

The obvious advantage to buying a 286 based system is its price. Generally speaking 286s run about 30% less than a comparably equipped 386sx. So the question still remains:

Why bother?

#1: Memory Management

One of the biggest issues in the PC industry since its inception, has been memory management. The DOS base memory limitation of 640K is causing more and more headaches as applications mature.

With products such as 386Max and QEMM 386 on the market, RAM Cram is not as much of an issue for 386 class personal computers. The ability to load device drivers, network shells, and TSR applications into memory above 640K is a gift from heaven. Of

course neither 386Max nor QEMM 386 support the 286 family of processors.

#2: Software Compatibility

One of the biggest falsehoods about 386 technology is that it isn't supported very well from the software applications side. The fact of the matter is that developers are producing 386 applications at blinding speeds.

Probably the most famous of these new applications is Microsoft's Windows 3.0. Developed with direct support for the Intel 386 family of processors, Windows allows users to operate the way they were meant to work - doing more than one thing.

Think about it. At any one moment and time, any task requires a group of smaller tasks. If one task has to be stalled for a period of time while another is initiated, it is not only time consuming but also you lose your train of thought.

#3: Productivity

Generally speaking, the faster the computer the more productive the user. By improving processing



performance by an average of 35 to 50% (coupled with the ability to multitask), all jobs can be done quicker and with less effort.

Take the time to fill out the cost analysis in Figure 1. You may find that in fact an SX will pay for itself in time saved.

#4: The Future

Overall, it doesn't make sense investing today's dollars into yesterday's technology and expect to make any substantial gain. It is time for new PC buyers to take a hard look at what tomorrow will bring and take advantage of these wonderful new technological advancements.

Take fax boards as an example. Most fax boards for PCs support the ability to work in the background by off loading some of the processing to a chip on the fax board itself. However, as this process still requires the use of system resources it slows down the applications running in the foreground.

The cure for this is a faster, more powerful PC.

We seriously recommend that you take a close look at the 386sx as the most logical step. They may cost a little more, but they're definitely worth it.



Check Under The Hood

Bringing your car into the shop for a tune up once or twice a year is pretty much necessary. But have you ever stopped and wondered if your computer and printers deserve the same treatment?

The fact of the matter is that PCs, dot matrix printers, and laser printers, all need to get the old oil over at least once a year. Like cars, parts can build down due to dirt build up and neglect.

Aside from offering PC service and support at all AND locations across Canada, we also offer either a depot or on-site service on PC and peripheral tune ups. This service is available for most makes and models of computer equipment and printers at very competitive rates.

For further information, contact the AND office nearest you, or call our National Head Office at (604) 276-6885.

Complete Your Own 386™ SX Cost Analysis

System Depreciation Cost Per Day

	Total Cost \$	4 Yrs/Days	Cost Per Day
386-SX System Cost	<input type="text"/>	+ 1040 =	<input type="text"/> (A)
286-System Cost	<input type="text"/>	+ 1040 =	<input type="text"/> (B)
Difference in 386-SX Cost/Day versus 286 System Cost/Day			<input type="text"/> (C) = (A) - (B)

Employee Salary Cost

	Payroll \$	Cost/Day	Cost/Minute
Yearly Salary (No Benefits)	<input type="text"/>	+ 365 Days =	+ 480 Min = <input type="text"/> (D)
OR Hourly Salary	<input type="text"/>		+ 60 Min = <input type="text"/> (D)

Minutes of Employee Time Saved Required to Pay for Incremental System Cost

System Cost/Day Difference (C)	Employee Salary Per Minute (D)	Minutes Saved To Pay For 386 SX Incremental Cost
<input type="text"/>	<input type="text"/>	<input type="text"/> Per Day

FIGURE 1: A comparative cost/performance analysis between 286 and 386sx based computers.



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- 2.5MB RAM (1MB Free)
- Free SC-1 Font Cartridge
- 8 Pages Per Minute

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LBP-8
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\$ 2,195.⁰⁰

Reg. \$ 2,700⁰⁰



Canon BJ-10e
BUBBLE JET PRINTER

- Free Carrying Case
- Fabulous Print Quality
- Weights 4 Lbs.
- Optional Battery Available

ONLY
\$ 495.⁰⁰

Reg. \$ 970⁰⁰

- 1.5MB RAM (1MB Free)
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- 4 Pages Per Minute
- Free Sheet Feeder

Canon
LBP-4
LASER BEAM PRINTER

ONLY
\$ 1,350.⁰⁰

Reg. \$ 1,600⁰⁰





ANOVATIONS

New Additions

ANO Office Automation is proud to welcome four new additions to our offices in Surrey (Eric Houck - Technician), Vancouver (Cory Cuthbert - Sales) and Richmond, B.C. (Brad Calbrick and Peter Bouchard - Sales). We wish them all the best of luck!

Major Reduction

In a move to improve its share

of the competitive spreadsheet market, Computer Associates announced a 70% list price reduction on its popular SuperCalc 5 product. Effective immediately, the SRP for SuperCalc 5 will be \$ 179.00 Canadian (down from \$ 599).

LANtastic Note

Users looking to run Drive- based applications on LANtastic,

the number one selling peer-to-peer Local Area Network operating environment in North America, should look to Novell instead. One example is The Maximizer. Although it is capable of running on the workstation stand alone, it crashes when operated in a network environment under LANtastic.



Reader Response Card



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 Computer Training
 SuperCalc 5

Suggestions: _____

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